

**ABSTRACT OF THE DISCLOSURE**

Ligands for flt3 receptors capable of transducing self-renewal signals to regulate the growth and differentiation of stem cells. The invention is directed to flt3-ligand as a homogeneous protein, the DNA encoding the flt3-ligand, host cells transfected with the ligand, compositions comprising the ligand, methods of improving gene transfer to a mammal using the ligand, and methods of improving transplantations using the ligand.